



Linda S. Adams
Secretary for
Environmental Protection



Department of Toxic Substances Control

Maureen F. Gorsen, Director
700 Heinz Avenue
Berkeley, California 94710-2721



Arnold Schwarzenegger
Governor

FILE COPY

April 16, 2007

Certified Mail

Ms. Stephanie Goodwin
Department Head
Environmental Protection Department
Lawrence Livermore National Laboratory
7000 East Avenue
Livermore, California 94550

Dear Ms. Goodwin:

On September 27, 28, October 2, 6, and 11, 2006, the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC), conducted an inspection of Lawrence Livermore National Laboratory (LLNL), 7000 East Avenue, Livermore, California. The enclosed report describes the findings of this inspection, including all violations and any actions that should be taken by the facility to correct the violations.

The following violations which are described in this inspection report were found subsequent to the inspection and were not listed in the Summary of Violations left with you at the end of the inspection.

Minor Violations

Failure to Provide Annual Training

1. LLNL violated California Code of Regulations, title 22, section 66264.16 (c) in that, the facility failed to provide the required annual training, to wit:
 - a. On or about 5/11/04, 04/29/05, and 04/04/06, John Bowers took a 0.5 hour web- based course, HS1670-W, Qualification for Fire Extinguisher Users, instead of the 1.0 hour HS1670-CBT (computer based training), as specified in the approved Training Matrix , Part B, Volume 5, Appendix VII-A, Rev. December 2005.

- b. On or about 2/27/04, 01/19/05, and 01/03/06, Scott Graham took a 0.5 hour web based course, HS1670-W, Qualification for Fire Extinguisher Users, instead of the 1.0 hour HS1670-CBT (computer based training), as specified in the approved Training Matrix, Part B, Volume 5, Appendix VII-A, Rev. December 2005.

Corrective Action

Within 20 days of receipt of this report, LLNL shall provide the required annual training to the above employees as specified in the approved Training Plan. In the future, LLNL must ensure that a permit modification request is submitted to DTSC prior to implementing changes to the training courses that were approved as part of the permit.

In addition, LLNL shall make certain that courses listed on the Training Program for each job title, is consistent with the approved Training Plan. [NOTE: The Training Program for job titles, "Waste Treatment Group Leader and Disposal Operations Technician" provided to DTSC during the inspection, showed course "HS1670" as web-based which is not consistent with the Training Plan].

Failure to Include Incident Commander Duties

2. LLNL violated California Code of Regulations, title 22, section 66264.16 (d)(2) in that, on or about September 27, 2006, LLNL failed to include in John Bowers' Job Duties as Waste Treatment Group Leader, his additional responsibility as an Incident Commander for small incidents in Areas 514, and 695 Storage and Treatment Unit Group. Mr. Bowers is on the Emergency Call list in the RWHM Contingency Plan, Rev. July 2004.

Corrective Action

Within 20 days of receipt of this report, LLNL shall modify Mr. Bower's job duties to include his role as an Incident Commander for small incidents in Areas 514, and 695 Storage and Treatment Unit Group.

Failure to Include the Time of Inspection

3. LLNL violated California Code of Regulations, title 22, section 66264.15(d) in that, on or about 10/6/05, 01/05/06, 04/19/06, 07/05/06, 10/05/06, LLNL failed to include the time of inspection on the

inspection log for inactive facilities – Container Storage Unit 233,
Building 419, and Area 514.
Corrective Action

LLNL shall ensure that on the next quarterly inspection (April 2007), the time of inspection is included in the inspection log.

You are required by section 25185(c)(3) of the Health and Safety Code to submit a written response to DTSC within 30 days describing the corrective actions that you have taken or propose to take to bring your facility into compliance. If you dispute any of the violations, you should explain your disagreement in this written response. The issuance of this letter does not preclude DTSC from taking administrative, civil, or criminal action as a result of the violations noted in the report.

All pertinent information derived from the inspection, including documents, photographs, and sampling results, are included as attachments to the report, except copies of documents provided by your facility at the time of the inspection. In order to reduce copying and mailing costs, these have not been returned to you with the report; copies will be provided if you request them. This report will become a public document; you may request that any trade secret or facility security information be withheld from public disclosure. (See Health and Safety Code Section 25173 attached.)

If you wish to assert the trade secret privilege after you have reviewed the report, please provide specific answers to each of the following questions, for each item, within 10 days of receipt of this letter:

1. To what extent is there knowledge of the information conveyed by the photograph/document outside your business?
2. To what extent is there knowledge of the information conveyed by the photograph/document, by employees and others in your business?
3. To what extent have measures been taken to guard the secrecy of the information?
4. Is the information valuable to competitors? If so, why?
5. Has there been substantial monetary expenditure in the development of the information?
6. Could the information be easily and properly acquired or duplicated by others?

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DTSC will review this information to determine if the information should be treated as trade secrets and notify you accordingly.

If you have any questions regarding this letter, or if you wish to meet with DTSC to discuss any questions or concerns you have with the inspection, the report, the violations, or the proposed corrective action, please call me at (510) 540- 3869.

Sincerely,

Luz Castillo
Senior Hazardous Substances Scientist
Statewide Compliance Division

Enclosure

Certified Mail No.: 7004 2890 0000 7273 4074

cc: Mr. Mohinder Sandhu (without attachments)
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, California 95826-3200

INSPECTION REPORT**FILE COPY****I. GENERAL INFORMATION**

Company Name: Lawrence Livermore National Laboratory

Facility Address: 7000 East Avenue
Livermore, California 94550

Telephone Number: (925) 423 - 4760

EPA ID Number: CA2 890 012 584

Facility Type: Storage and Treatment Facility

Regulated Units: Permitted Units-Area 612, Storage and Treatment; Building 695, Storage and Treatment; Building 693, Container Storage; Building 696 Storage and Treatment; Interim Status- Area 514, Storage and Treatment, Building 233, Container Storage (inactive -undergoing closure); Tiered Permitting-Resin Mixing Unit.

Waste Streams: Nearly all hazardous wastes, mixed wastes (RCRA hazardous with radioactive components); combined wastes (Non-RCRA hazardous waste with radioactive components)

Regulatory Status: Permitted and Interim Status Facility; Permit effective November 19, 1999 ; Registered Hauler, Reg. No. 1351, Expires on 11/30/2007.

Inspected by: Luz Castillo; Dale Parks

Dates of Inspection: September 27, 28, October 2, 6, and 11, 2006

Type of Inspection: CEI ☒ CME ☐ O&M ☐ Focused ☐ Limited ☐

Type of Business: Research and Development Laboratory on: nuclear weapons, magnetic fusion, energy, lasers, biomedical and environmental sciences, and applied technology, and other nuclear applications research laboratory.

II. CONSENT

Consent to conduct inspection that involves: taking photographs, reviewing and copying records, questioning personnel and inspecting hazardous waste handling areas.

Consent given by (name and title): Patrick Epperson, Acting Division Leader, Radioactive and Hazardous Waste Management Division

III. BACKGROUND

Lawrence Livermore National Laboratory (LLNL) is a national laboratory owned and operated by the United States Department of Energy (DOE). LLNL is jointly operated by the University of California Regents and DOE. LLNL operates a research and development facility to conduct research and development programs on nuclear weapons, magnetic fusion, energy lasers, biomedical and environmental sciences, and applied technology.

The research and development programs at LLNL generate hazardous, mixed and combined wastes.

Mixed wastes are hazardous wastes, regulated under the Federal Resource Conservation and Recovery Act (RCRA) that also contain low level radioactive materials. Mixed wastes generated include rinsewater that contains organics or metals, spent caustic and acidic solutions, soils from clean-up activities, scrap metal, waste treatment sludges, and empty containers. Combined wastes are non-RCRA hazardous wastes that also contain low level radioactive materials. Combined wastes generated at the laboratory include waste oils, contaminated laboratory trash, and empty containers.

In February 1997, DTSC issued a Compliance Order to the United States Department of Energy (DOE) requiring DOE to comply with the Site Treatment Plan (STP) for the treatment of mixed waste at LLNL pursuant to RCRA as amended by the Federal Facility Compliance Act of 1992 (FFCA). The FFCA required DOE to prepare a STP for developing treatment capacities and technologies to treat all the facility's mixed waste to meet LDR. The STP consists of the Compliance Volume and the Background Volume. The Compliance Volume provides overall schedules for achieving compliance with LDR storage and treatment requirements for mixed wastes based on milestones (milestones have both an event and a date component, and is a fixed, firm, and enforceable obligations of DOE). Background Volume contains progress reports and other information. DOE is required to carry out all activities in accordance with the schedules and requirements in accordance with the STP and the Compliance Order.

The combined waste, which is regulated only under state law, is regulated under the terms of the Memorandum of Understanding (MOU) between DTSC and DOE. The MOU, signed on August 18, 1997, sets forth agreed upon terms for determining the future regulation of combined wastes at DOE facilities. DTSC and DOE agreed to complete a Memorandum of Agreement (MOA) for both agencies to discuss the requirements for future regulation of combined waste. Pending the finalization of an MOA, DTSC agreed to refrain from taking enforcement action against DOE with respect to the treatment, storage and disposal of combined wastes without a permit or authorization, provided the management of the combined waste streams is consistent with DOE.

LLNL is operating a hazardous waste and mixed waste storage and treatment facility under a Hazardous Waste Facility Permit (HWFP) issued to LLNL on November 19, 1999. Modifications in 2001, 2002, 2003 and 2004, 2005 are listed in Appendices A and B of the Hazardous Waste Facility Permit (HWFP), Attachment B. The latest modification to the permit was on December 9, 2005.

Prior to the issuance of the HWFP, LLNL was under interim status. The HWFP allowed LLNL to continue operating under Interim Status, the Building 233 Container Storage Unit and specific units at Area 514 Treatment and Storage Area, until the completion of the construction and activation of the DWTF Complex and Building 280 Container Storage Unit. The DWTF Complex commenced operation in September 2003.

On April 13, 2001, LLNL informed DTSC of its intent to submit a permit modification request to remove Building 280 Container Storage Unit from the permit. On January 9, 2004, LLNL submitted a class 2 modification request to relocate the currently permitted storage capacity and operation from Building 280 to Building 696 R and to administratively close Building 280. The modification request granted on December 9, 2005 included the use of the following units in Building 696: Room 1009 Waste Packaging Unit and Drum/Container Crushing; Room 1007, 1008, 1009, 1010 and 1011 Storage Units. See HWFP, Attachment B.

There are three inactive areas at LLNL: Building 233 Container Storage Interim Status Unit and Area 514 are currently undergoing closure. The Closure plan for Building 419, operated under interim status,

has not yet been approved by DTSC.

Since the effective date of the HWFP, DTSC has conducted yearly inspections at LLNL. During the March 2000, May 2002 and March 2003 inspections, class I violations were observed which included the: storage of mixed wastes containing trichloroethylene, toluene, and spent organic solid trash for more than one year; storage of hazardous waste drums containing organic liquid trimsol and water; receipt, treatment and storage of liquid shredder waste without following the Waste Analysis Plan; and failure to provide employees with the required training courses for handling hazardous wastes. The Class 1 violations were settled in a Consent Order, HWCA 20020090, dated February 5, 2004. The 2001 inspection found class 2 and minor violations on: container labeling and inaccurate operating record.

In the 2004 inspection, class 1 violations were observed as follows: commingling incompatible wastes in the same container; certifying prohibited wastes for land disposal without meeting treatment standards; failure to comply with the Waste Analysis Plan; storage greater than one year; failure to comply with labeling requirements; failure to follow the Waste Analysis plan; failure to accurately record observations in an inspection log. All violations have been corrected based on documents provided to DTSC by LLNL. The Class 1 Violations from the 2004 inspection were settled in a Consent Order, HWCA20040573, dated August 28, 2006.

In the 2005 inspection, DTSC found the following class 2 violations: unauthorized storage of hazardous waste tanks from Area 514 closure activities; inaccurate labeling of hazardous waste containers; and inaccurate operating records.

A copy of the Consent Order(s) and inspection reports from 2001 to 2005 are available on the DTSC website at [http://www.dtsc.ca.gov/hazardous waste/LLNL](http://www.dtsc.ca.gov/hazardous%20waste/LLNL).

IV. DOCUMENTS REVIEWED

a. Manifests, Bills of Lading, LDR's and Exception Reports:

Generator Manifests

Generator manifests for November 2005 were requested for review. No violations were noted.

I also requested a copy of manifest no. 23446957, dated 9/23/05, which accompanied the shipment of five (5) drums to Duratek (Attachment D). The manifest was signed for LLNL by David Wiffen, a waste broker from Tennessee. According to LLNL, "The State of Tennessee requires shippers of radioactive wastes to carry a specified amount of liability insurance. The University of California is self-insured and does not recognize UC's self-insured status as meeting the liability requirements. Therefore, LLNL (operated by UC) employees cannot sign manifest for radioactive wastes shipped to treatment, storage and disposal facilities (TSDF) within the State of Tennessee and must use a licensed waste broker. The person who signed manifest 23446957 is a licensed broker recognized by the State of Tennessee." See Attachment D, for additional documentation provided by LLNL.

The 5 drums of waste were received by Duratek on 9/28/05. On 01/26/06, Duratek shipped 1 drum from the LLNL wastes to Envirocare in Clive, Utah, for disposal; Item 15 of manifest 23447055 indicates, "Waste sorted at Duratek Services, 1560 Bear Creek Road, Oak Ridge, TN 37830." Although the waste was received at Duratek, LLNL was kept as the generator of the waste when

shipped to Envirocare. Mr. Wiffen signed the manifest for LLNL. See Attachment D.

TSDF Manifests

A manifest that accompanied the shipment of waste from LLNL Site 300 (manifest no. 23447028) was requested for review. No violation was noted.

b. Contingency Plan:

A copy of the latest Emergency Call list on the Radioactive Hazardous Waste Management Contingency Plan was requested for review. DTSC has a current copy of the Emergency call list, revised in July 2004, on file (Attachment E).

c. Training Plan and Records:

The 3-year training records of the following employees were requested: Kerry Cadwell, John Bowers Scott Graham, and David Wiffen.

Kerry Cadwell, Storage and Disposal Group Leader

Ms. Cadwell completed all the required training as a Storage and Disposal Group Leader. Ms. Cadwell's duties included her role in providing emergency response and clean-up guidance at LLNL and Site 300. See Attachment F. (Ms. Cadwell is listed as an Incident Commander for small incidents on the RHWM Contingency Plan's Emergency call list for Area 612, B233 CSU and B693 CSUG, Attachment E). No violations were noted.

John Bowers, Waste Treatment Group Leader

Mr. Bowers' training record shows that on 5/11/04, 4/29/05 and 04/04/06, Mr. Bowers took the course HS1670-W (web-based), Qualification for Fire Extinguisher Users, which was 0.5 hour long. Per Appendix VII-A of Part B, Volume 5, Waste Management Training Program Course Descriptions (Attachment F), the approved course is a not a web-based training but computer based, HS1670-CBT, and course length is 1.0 hour (Appendix VII-B of Part B, Volume 5, Attachment F). During the inspection, LLNL provided DTSC a copy of the Training Program (program) dated September 2005, for Waste Treatment Group Leader. The program shows that HS1670-W is web-based and is 2 hours long (Attachment F). See item VI, Violations section, Minor violation 1. a.

In addition to his duties as a Waste Treatment Group Leader, Mr. Bowers is listed as an Incident Commander for small incidents for Area 514 and B695 CSTUG on the RHWM Contingency Plan's Emergency call list (Attachment E). However, his Job duties as described in the Waste Treatment Group Leader Training Program dated September 2005 (Attachment F) did not include his role as an Incident Commander for small incidents. See Item VI. Violations Section, Minor Violation 2.

Scott Graham, Disposal Operations Technician

Mr. Graham's training record shows that on 02/27/04, 01/19/05, and 01/03/06, Mr. Graham took the course HS1670-W (web-based), Qualification for Fire Extinguisher Users, which was 0.5 hour long. Per Appendix VII-A of Part B, Volume 5, Waste Management Training Program Course Descriptions (Attachment F), the approved course is computer based training, HS1670-CBT; course length is 1.0

hour (Appendix VII-B of Part B, Volume 5, Attachment F). During the inspection, LLNL provided DTSC a copy of the Training Program dated September 2005, for Disposal Operations Technician. The program shows that HS1670-W is web-based and is 1 hour long (Attachment F). See Item VI. Violations Section, Minor Violation 1. b.

David Wiffen

When I requested a copy of Mr. Wiffen's training record, Ms. Salvo informed me that LLNL's Training Group did not have a training record for Mr. Wiffen. I informed Ms. Salvo that I obtained Mr. Wiffen's name from a manifest that Mr. Wiffen signed from LLNL that accompanied the shipment of waste to Duratek. At first, LLNL informed Mr. Parks and I that Mr. Wiffen is an employee of Duratek. According to LLNL, Duratek would not receive the waste unless an employee is present during the packaging of the waste for shipment to their facility. In LLNL's later response to DTSC's questions relating to the wastes shipped to Duratek and the signatory on the manifest, LLNL indicated that Mr. Wiffen is a licensed state broker for the State of Tennessee. See Attachment D. See item IV. a. for more details.

d. Incident Report:

None

e. Waste Analysis Plan and Records

The analysis of waste in Q23447086/ W144472 shipped to Energy Solutions in Utah on April 19, 2006, manifest no. 23447086 was requested for review. The analysis of composite samples taken showed that the waste met the specified Land Disposal Restrictions treatment standards. No violation was noted.

f. Operation Log

Inventory of Hazardous Wastes

LLNL's Hazardous Waste Facility Permit (HWFP) requires that the total volume of regulated and non-regulated waste and materials including radioactive materials (subject to the Atomic Energy Act) in each unit shall not exceed the storage capacities allowed in the permit. In addition, the permit requires that cumulative volume of regulated waste stored in all units including tanks at any one time shall not exceed 808,000 gallons [Attachment B, HWFP, and IV.9. (a)].

Based on DTSC's review of LLNL's inventory of materials and wastes, including radioactive wastes in the permitted units, there were a cumulative total of approximately 299,932 gallons of regulated and non-regulated wastes. In addition, the amount of waste in each storage unit was compared with the capacity allowed in the permit. The cumulative total and the amount of waste stored in each permitted unit (Attachment G) was within the amount allowed in LLNL's permit

CONTAINER TRACKING

Containers were picked at random during the walk-through in the storage areas, to determine LLNL's compliance with the operating record requirements. The container labeling information and location of each container was noted and compared with the facility's operating record.

Each container at LLNL has a barcode used for tracking the movement of the waste. The barcode on the waste container is scanned into LLNL's Hazardous Waste Management's database, Total Waste Management System (TWMS) where various reports can be generated.

DTSC was provided with a Container Contents Report (CCR) for each container noted for review during the site walk-through. The CCR information include items required for an operating record such as: container number and waste disposal requisition numbers; waste type; EPA/State waste code(s); waste description, hazard property(ies), quantity, waste form; container location; manifest number (if shipped off-site); and TSDf start date. For wastes stored over a year, STP information or storage extension letters were requested.

Twenty-three containers (23) of hazardous and/or mixed wastes were picked at random for review. The CCR for the following containers were requested and reviewed: Q205395; Q81673; Q66800; Q59949; Q213047; Q 205099; Q213770; L201497; Q76919; Q208053; Q55002; Q205114; Q64904; Q206113; Q57257; Q214247; Q226887; Q205517; Q219967; Q219375; Q224922; Q201509; Q230338. No violations were noted from the review of the container records.

Prior to the inspection, LLNL's manifest history from the previous year was reviewed from DTSC's Hazardous Waste Tracking system. Seventeen (17) containers were randomly picked from TSDf manifests (wastes from LLNL Site 300), from generator manifests, and from other documents indicating storage of hazardous waste over a year. In addition to the CCR information, a transaction query was requested, which provides a location history of the container. The documents requested were for the following containers: Q89445; Q89447; Q89823; Q206250; Q218624; Q218646; Q87204; Q208732; Q214247; Q47005; Q62990; Q62993; Q62999; Q63002; Q222705; Q222704; Q223448. No violations were noted from the review of these documents.

TREATMENT UNITS PROCESS LOGS AND INSPECTION LOGS

Area 612 Facility -

B612 Drum Crushing Unit

On January 9, 2004, LLNL sent DTSC a Class 2 modification request to move the B612 Crushing Unit to Building 696. The request was approved on December 9, 2005. The HWFP (Attachment B) had been modified to reflect the change in location of the crusher.

During the inspection, the Drum Crushing Unit was observed in B612. According to Mr. Yimbo, the unit could not be moved to Building 696 until it is approved by DOE. A review of the Drum Crushing Log showed that the unit was used for crushing hazardous waste drums in January 26, March 31, April 20, July 19, and September 12, 2006. See Attachment H. See Attachment C, Summary of Violations dated October 18, 2006, and Item VI., Violations, Class 2, Violation 1.

Inspection of the Drum Crushing Unit, located in 612-100 consisted of: Safety Precautions check, pre-use and post-crush inspection of the unit (Attachment H, Daily When In Use Inspection

Log For Container Crushing Unit). A Drum Crush Log, listed the containers that were crushed and the destination of the crushed containers. The September 12, 2006 Crush Log (Attachment H), showed that the crushed containers were placed in a roll-off bin, Q000208053, observed outside B693 during the inspection. See Item V, Narrative of Observations, September 27, 2006, Building 693 Containers Storage Units. The Drum Log also showed that crushed drums on the following dates were placed in bins as follows: to the following bins: 01/26/06, 3/31/06 and 4/20/06- bin Q222859; and 7/19/06- Q208050. See Attachment H.

B612 Size Reduction Unit (SRU) –This unit was used for sampling and verification of low-level wastes on September 26, 2006. The Daily When In Use Inspection Log for B612 Size Reduction Unit, consisted of Safety Precautions check, and checking the entrances and surrounding areas for cautionary signs and for signs of spills, erosion, and leakage (See Attachment I). No violations were noted.

DWTF Tank Farm-

The Tank farm consists of nine 5,000-gallon cylindrical tanks with conical bottoms. Two tanks, THL-108 and THL-109, were labeled as containing waste blend 06-05, with a 4/25/06 date. See Daily Inspection Log for Building 695 Tank Farm dated 9/28/06 and Hazardous Waste Management Processing Storage Areas on Attachment L.

Debris Washer-

The treatment log for the Debris Washer (Attachment J) from 08/9/2006 to 09/22/2006 was reviewed. The treatment log information included: a blend number (Blend number 695-06-05); process dates; name of technician; a debris log that contained a list of drums that were processed, and container or WDR designation on the liquid generated from the debris washer, for tracking purposes.

A copy of the Daily When-In-Use inspection Log for the Debris Washer for 9/22/06 was reviewed (Attachment J). No violation was noted.

Bulking/Drum Rinsing Station-

The unit uses water or water with detergent to rinse or triple rinse empty drums and containers. For related records review on this unit, see note below.

Dorr-Oliver Filtration Unit

The unit is used to remove solids such as precipitates, suspended solids, or particulates from liquid hazardous and mixed wastes before or after waste treatment or storage at B695 Waste Treatment Tank Farm. For related records review on this unit, see note below.

Solidification Unit-

The treatment uses a stabilizing agent to reduce the mobility of the

contaminants in the waste. For related records review on this unit, see note below.

Cold Evaporator Unit -

The unit operates under vacuum at low pressure to evaporate the water in the waste which results in the concentration of dissolved and suspended solids. For related records review on this unit, see note below.

NOTE: Treatment Logs for the following were reviewed: Bulking /Drum Rinsing Station; Dorr-Oliver (D.O.) Unit; Cold Evaporator Unit; and Solidification unit. The treatment log contained the: amount of waste generated from the rinsing of drums and portable tanks; column clean-out generated from the evaporator unit; the amount of D.O. cuttings generated from the filtration unit; and the container tracking/requisition numbers of drums stabilized , and the new tracking and requisition for the treated wastes for drums stabilized. See Attachment K.

g. Inspection Records:

For DTSC's review, daily and weekly inspection logs for December 2005 and for August and September 2006 were requested for Area 612, Buildings 693, 695, and 696.

Daily Inspection Logs

LLNL's Daily Inspection Logs for permitted container storage units located in Area 612, Buildings 693 and 696R and 696 S, have been consolidated in a 2- page document. See Attachment L. No violations were noted from the review.

The Daily inspection logs for Building 695 which include the nine tanks in the Tank Farm and the waste processing areas (December 2005 and August/September 2006) were also reviewed. See Attachment L. No violations were noted.

Weekly Inspection Logs

The December 2005 and August/September 2006 weekly inspection logs for all the permitted storage areas were also reviewed. No violations were noted. See Attachment M for a copy of Building 696 Container Storage Units' Weekly Inspection Log. DTSC approved the use of Building 696 for hazardous waste storage and treatment on December 9, 2005.

Buildings 233, 419 and 514 Inspection Logs (Attachment N)

On May 20, 2005, LLNL requested to reduce the frequency of inspection to quarterly since there are no waste activities being performed in these 3 areas. In addition, equipment associated with previous waste handling activities had been removed from the buildings. On August 19, 2005, DTSC approved LLNL's request to reduce the frequency of inspection to Buildings 233, 419 and 514.

Quarterly inspections from October 2005 to October 2006 were requested for DTSC's review. The inspection logs did not contain the time of inspection as required. See Item VI., Violations Section , Minor Violation 3.

h. Annual/Biennial Reports:

LLNL's Annual Report was submitted to DTSC on March 15, 2005. The annual report was not reviewed.

i. Hauler Registration:

LLNL's current registration at the time of the inspection had an expiration date of November 30, 2006. A review of DTSC Hauler's database showed that LLNL's Hauler registration has been renewed; LLNL's registration expires on November 30, 2007.

j. Permit Compliance Schedule

LLNL's Hazardous Waste Facility Permit Section IV.8. (d) [Attachment B], requires the submittal of an annual report for small scale treatment activities.

On March 15, 2006, LLNL submitted an annual report for small scale treatment operations in the Reactive Waste Processing Area. Treatment processes conducted were: oxidation; solids washing; chemical reduction and gas venting.

k. Compliance With Consent Order

The Consent Order HWCA 20020090 (Attachment B), dated February 5, 2004, required LLNL to submit semi-annually after March 5, 2004 an inventory of all treated wastes that meet LDR and that have exceeded the one year storage limit allowed in the permit.

In its March 3 and September 6, 2006 submittal LLNL indicated that Radioactive and Hazardous Waste Management personnel did not identify any waste that met the criteria since its last submittal in September 2005. The information submitted by LLNL was verified during the operating records review of the inspection.

V. NARRATIVE OF OBSERVATIONS/DISCUSSION WITH OPERATOR

See Site Maps, Attachment A, for reference.

September 27, 2006

DTSC employees Steve Friesen, Paul Ruffin, Dale Parks and I (we) arrived at the West Badge Office to obtain the necessary badge and paperwork to access the facility. We were met by Mr. Stan Terusaki at the Badge Office. We proceeded to the Environmental Protection Department office where we had a pre-inspection meeting with Lawrence Livermore National Laboratory (LLNL) and Department of Energy (DOE) personnel.

The meeting began with a brief introduction from the attendees (See List of Attendees, Attachment O). I described the scope of the Compliance Evaluation Inspection (9CEI) as consisting of a walk-through at the permitted hazardous and mixed waste handling and generator areas, taking photographs, reviewing and copying records and interviewing personnel as necessary. I also informed them that Mr. Friesen will be providing Mr. Ruffin, Mr. Parks and I, industrial hygiene, field safety and radiological monitoring support. I asked LLNL for consent to proceed with the inspection as described. Mr. Patrick Epperson,

Acting Division Leader, Radioactive and Hazardous Waste Management Division of the Environmental Protection Program, granted us consent.

The walk-through inspection began at 12:30 p.m. at the Decontamination and Waste Treatment Facility (DWTF). The inspection crew was as follows: Kerry Cadwell; Richard Michalik; Peter Yimbo; James Anson; Dale Parks; Steve Friesen and Luz Castillo.

Prior to the walk-through, Ms. Cadwell gave us a Safety Briefing. The inspection was as follows:

DWTF Portable Tank Storage Pad

A 5,000-gallon tanker (Q230338) with hazardous waste label, containing chromium, corrosive wastewater was observed. The tanker had a hazardous waste label with an accumulation date of 9/21/06. The waste was on-site generated according to Ms. Cadwell. The eyewash shower in the area last inspected by LLNL on 9/27/06, was checked and was found in good operating condition. A record of the tank's contents was requested for later review. See Item IV.f., Operating Records for detail.

Vehicle Inspection

The only vehicle observed during the inspection was the 5,000 gallon tanker containing corrosive wastewater located in the DWTF Portable Tank Storage Pad. The tanker appeared to be in good condition. There was no other hazardous waste transportation vehicle observed at the site.

Building 693 Container Storage Units

Outside Building 693, I observed two roll-off bins located north of the building. One bin was empty and the other bin, Q2080503, contained crushed drums and had a hazardous waste label dated 01/24/06.

Inside Building 693 is the storage unit which is divided into four cells: 1000; 1004; 1008; 1012, and a Classified Waste Storage. The eyewash/shower in each cell was checked and was found in good operating condition; the inspection tags showed that they were all inspected on 9/20/06.

The following drums from each cell were noted for records review: 1000- Q205517; 1004- Q226887; 1008- Q224922; Q219967; Q214247; Q57257; Q206113; Q64909; and 1012- Q205114.

The Annex Container Storage Area, cell 1014 contained mostly lab trash and was not inspected. The Freezer Storage Unit was not being used according to Ms. Cadwell.

Building 696 Container Storage/Treatment Group

The permitted storage and treatment units in Building 696, approved on December 9, 2005, contained only radioactive wastes and have not yet been used for storage of regulated wastes, according to Ms. Cadwell.

Although the relocation of the crusher was approved by DTSC, the crusher remained in Building 612 and continued to be utilized for crushing mixed waste drums. According to LLNL, the crusher has not been moved pending approval by DOE. See Summary of Violation (SOV), and Item VI., Violations section Class 2, Violation 1.

Ms. Cadwell left after the inspection of Building 696. We all continued on to Building 695 Container Storage and Treatment Units

Building 695 Container Storage and Treatment Units

Mr. Bowers accompanied us during the walk-through at various treatment processes and storage areas in Building 695.

Tank Farm

The tank farm consists of nine 5,000-gallon cylindrical tanks with conical bottoms. I observed two tanks, THL-108 and THL-109 that contained wastes being blended. The tanks had a hazardous waste label, "waste blend 06-05, mixed waste, toxic, 4/25/06."

DORR OLIVER Unit (DO)

The DO was observed in the northeast corner of Building 695 (Attachment A, Photo. No.1). The DO replaced the Filtration Unit previously approved in the permit. The installation of the DO was approved on December 9, 2005. The unit was not in operation during the inspection. According to Mr. Bowers, the unit was last used 5 months prior to our inspection. The treatment record for the DO was requested for our review. See item IV.f. for details on the operating records review

Cold Evaporation Unit

The Cold Evaporation Unit is designed to concentrate dissolved radioactive and hazardous solids by evaporating the water from the waste, to produce a condensate for discharge into the sewer. The unit also reduces the volume of hazardous waste for off-site disposal. The treatment record for the Cold Evaporator was requested for our review. See item IV.f. for details on the operating records review.

The following areas were not accessed due to an on-going decontamination operation in progress: B659 Air Lock (Room 1027), Container Storage Area; Debris Washer and Solidification Unit (Room 1037); Chopper and Shredder Room (Room 1038 and 1039). The Radioactive Waste Processing Rooms (1019 -1022) were in use and were not inspected.

In response to my inquiry on the location of other treatment equipment permitted for use in Building 695 that were not observed during the walk-through, Mr. Bowers took us outside, on the southwest corner of building 695 where the following were stored: Bulking Unit/Drum Rinsing Unit and Centrifuge Treatment Unit (Attachment A, Photo. No. 2) and Uranium Deactivation Unit and Hydraulic Drum Lifts for Bulking Rinse Station (Attachment A, Photo. No.3).

9/28/06

Ms. Salvo, Mr. Parks, Mr. Friesen and I met with Mr. Peter Yimbo in his office. Before we (Mr. Yimbo and Ms. Salvo and DTSC personnel) proceeded to Area 612 for the site walk-through, I asked Mr. Yimbo for consent to continue the inspection. Mr. Yimbo granted us consent.

At Area 612, we met with the following LLNL and DOE personnel that were participating in the site walk-through: Kerry Cadwell (lead); Peter Yimbo; Vicky Salvo; Wen Kao; James Anson. Ms. Cadwell gave us a safety briefing before we started with the walk-through.

Building 625 Container Storage Unit

The storage unit is divided into east and west areas. The east area contained mixed transuranic (TRU) and TRU only wastes. Due to elevated reading of >2millirem reading on the radiation meter which exceeds DTSC's exposure limit, the drums were viewed from outside the door. The drums appeared to be in good condition. A drum, Q205395, viewed from a distance was noted for later review.

The 625 west area was inspected and contained mostly radioactive wastes. The eyewash/shower was in good operating condition. An attached inspection tag indicated that it was last inspected on 9/27/06.

Area 612 Tank Trailer Storage Unit

This storage area was empty.

Area 612-1 Container Storage Unit

Tent areas A and B, contained less containers of mixed wastes than the previous year. The drums were all properly managed and the required aisle space between rows of drums was being maintained. Tent B contained only radioactive wastes. Containers noted in tent A for later review were: Q81673/W243833, 8/27/04; Q66800 (Hold label- 7/10/02). See item IV.f. for details on the operating records review.

Portable Tank Storage Unit

This unit contained only one portable tank containing radioactive waste. Portable tanks containing wastes are now stored in the DWTF Portable tank pad.

Area 612-2 Container Storage Unit

The drums stored were properly stored and labeled. Containers Q213047/w244568, TSDF date- 9/22/04; and Q205099/W241703, TSDF date-12/16/04 were noted for later review. See item IV.f. for details on the operating records review. The shower/eyewash located in the area was inspected and was found to be in good operating condition. The unit was last inspected by LLNL on 9/27/06. See item IV.f. for details on the operating records review.

Building 614 Container Storage Unit

Building 614 consists of the west and the east cells with four storage units each: west cells - 1001, 1002, 1003, and 1004; and east cells - 1101, 1102, 1103, and 1104.

West cell 1002 contained 1 fifty-five gallon container (Q55002 was noted for later review) and 2 five-gallon containers of waste. West cells 1001, 1003 and 1004, and east cells 1101, 1102 and 1103 were all empty. West cell 1104 contained only absorbent materials. See item IV.f. for details on the operating records review.

Building 612 Container Storage Unit

Building 612 houses the Size Reduction and the Drum/Container Crushing and a Container Storage Area. The containers in this area appeared to be properly managed. The required aisle space was

being maintained.

The Drum Crushing Unit was approved for relocation and use in Building 696 on December 9, 2005. According to LLNL, the unit can not be relocated until given an approval by DOE. According to LLNL, the unit was last used the previous week. I requested a copy of the drum crushing logs and inspection logs for later review. See SOV (Attachment C) and Item VI. Violations section, class 2,, Violation 1. See item IV.f. for details on the operating records review.

The 612 Size Reduction Unit was last used on 9/25/06 according to LLNL. The unit was used for sampling verification of low-level wastes. See item IV.f. for details on the operating records review.

Area 612-5 Container Storage Unit

Area 612-5 consists of three areas: a tent area, a caged area, and an open area. The outside area contained non-hazardous waste only.

The open area contained only non-hazardous wastes. The amount of waste in the tent area had been greatly reduced. Containers noted in the area for later review were: - Q213770, RHHM date- 4/28/06; SAA START- 11/30/05; END-2/13/06 and 612-5 BOX- L201497, 6/29/89 multi-pack HEPA'S; Q76919 10/1/02. See item IV.f. for details on the operating records review.

Area 612-4 Receiving, Segregation and Container and Storage Unit (Generator Status since 12/4/99)

This area is a Consolidated Waste Accumulation Area (CWAA), divided into five cells -Acids, Poisons, Caustics, and two Flammable Bays. The drums were properly labeled, stored and adequate aisle space between rows was observed.. Adequate aisle space between rows was observed. Drums were properly labeled and were all within the allowed 90-day storage limit for generators.

Building 612 Lab Packing/Packaging Container Storage Unit (Generator Status since 12/4/99)

This area was empty. The lab packing activity has been transferred in Building 696.

Records Review

The records review portion of the inspection was conducted on October 2, 6, and 11, 2006 with Mr. Yimbo, Mr. Michalik and Ms. Salvo. Each day before starting, I asked Mr. Yimbo for consent to continue the records review portion of the inspection. Mr. Yimbo granted Mr. Parks and I, consent.

Records reviewed include but not limited to: manifests; inspection logs; treatment/process logs; container records; operating records; waste inventories; emergency coordinators list; permit modification letters, etc. See item IV.f. for details on the operating records review.

In addition to the records review, I provided Mr. Yimbo with the RCRA 6002 Facility Questionnaire covering most recycled products (paper, insulation, mulch, concrete, etc.) for the facility environmental and procurement staff to complete and mail back to USEPA. An Inspector checklist for the vehicle maintenance was also provided to LLNL. LLNL provided its response to questions on the management of re-refined oil, reclaimed coolant and re-tread tires. DTSC will mail both the Facility Questionnaire and Inspector Checklist to USEPA Region IX (Attachment P).

VIOLATIONS

Class 2 Violations

Treatment of Hazardous Waste Drums at an Unauthorized Location

1. LLNL violated Health and Safety Code section 25202 (a) and California Code of Regulations, title 22, section 66270.30 (a) and Hazardous Waste Facility Permit, Part III.2 (b) in that, on or about January 26, March 31, April 20, July 19, and September 12, 2006, LLNL crushed hazardous waste drums at Building 612, an unauthorized location for drum/container crushing.

On January 9, 2004, LLNL submitted a Class 2 modification request for the relocation and use of the B612 Drum/Container Crushing Unit at Building 696. LLNL's request was approved and became effective on December 9, 2005.

Evidence: Attachment H
Witnesses: Luz Castillo; Dale Parks

Corrective Action

No further action is required regarding this violation. On October 18, 2006, LLNL signed a certification stating that the corrective action listed in the SOV has been corrected. (The SOV required LLNL to cease the operation of the Drum/Container Crushing Unit in Building 612).

The following violations which are described in this inspection report were found subsequent to the inspection and were not listed in the Summary of Violations left with you on October 18, 2006.

Minor Violations

Failure to Provide Annual Training

1. LLNL violated California Code of Regulations, title 22, section 66264.16 (c) in that, the facility failed to provide the required annual training, to wit:
 - a. On or about 5/11/04, 04/29/05, and 04/04/06, John Bowers took a 0.5 hour web- based course, HS1670-W, Qualification for Fire Extinguisher Users, instead of the 1.0 hour HS1670-CBT (computer based training), as specified in the approved Training Matrix , Part B, Volume 5, Appendix VII-A, Rev. December 2005.
 - b. On or about 2/27/04, 01/19/05, and 01/03/06, Scott Graham took a 0.5 hour web based course, HS1670-W, Qualification for Fire Extinguisher Users, instead of the 1.0 hour HS1670-CBT (computer based training), as specified in the approved Training Matrix , Part B, Volume 5, Appendix VII-A, Rev. December 2005.

Evidence: Attachment F

Witness: Luz Castillo

Corrective Action

Within 20 days of receipt of this report, LLNL shall provide the required annual training to the above employees as specified in the approved Training Plan. In the future, LLNL must ensure that a permit modification request is submitted to DTSC prior to implementing changes to the training courses that were approved as part of the permit.

In addition, LLNL shall make certain that courses listed on the Training Program for each job title, is consistent with the approved Training Plan. [NOTE: The Training Program for job titles, "Waste Treatment Group Leader and Disposal Operations Technician" provided to DTSC during the inspection, showed course "HS1670" as web-based which is not consistent with the Training Plan].

Failure to Include Incident Commander Duties

2. LLNL violated California Code of Regulations, title 22, section 66264.16 (d)(2) in that, on or about September 27, 2006, LLNL failed to include in John Bowers' Job Duties as Waste Treatment Group Leader, his additional responsibility as an Incident Commander for small incidents in Areas 514, and 695 Storage and Treatment Unit Group. Mr. Bowers is on the Emergency Call list in the RWHM Contingency Plan, Rev. July 2004.

Evidence: Attachments E and F

Witness: Luz Castillo

Corrective Action

Within 20 days of receipt of this report, LLNL shall modify Mr. Bower's job duties to include his role as an Incident Commander for small incidents in Areas 514, and 695 Storage and Treatment Unit Group.

Failure to Include the Time of Inspection

3. LLNL violated California Code of Regulations, title 22, section 66264.15(d) in that, on or about 10/6/05, 01/05/06, 04/19/06, 07/05/06, 10/05/06, LLNL failed to include the time of inspection on the inspection log for inactive facilities – Container Storage Unit 233, Building 419, and Area 514.

Evidence: Attachment N, Quarterly Inspection Logs

Witness: Luz Castillo

Corrective Action

LLNL shall ensure that on the next quarterly inspection (April 2007), the time of inspection is included in the inspection log.

I. CONCLUSIONS

October 18, 2006

A meeting to discuss DTSC's findings from the 2006 CEI was conducted at the Yosemite Room.

I began by thanking all attendees (Attachment O) at the meeting. I identified the following permitted storage and treatment areas and Consolidated Waste Accumulation Area (CWAA) visited: DWTF Buildings 693, 695, 696; and Area 612 which includes the CWAA in Area 612-4. I complimented them for their efforts in reducing the amount of wastes stored at the site.

I informed them that based on the walkthrough, I found one class 2 violation which pertains to the Building 612 Drum Crusher that was approved for relocation and use at Building 696 (See Attachment C, Summary of Violations). Although the class 2 modification was approved for relocation in Building 696 (Attachment B, HWFP), LLNL continued to use the crusher in Building 612, which is no longer authorized. I stated that I acknowledge the fact there is another layer of approval that is required from DOE before the unit could be transferred/used at Building 696; however, if LLNL was aware that the unit would not be moved until approved by DOE, LLNL should have mentioned it or discussed it in their modification request so the Permit Writer may have added a language in the permit that would allow LLNL to operate the crusher in its current location while awaiting DOE approval. LLNL was in agreement. LLNL stated that they have already stopped using the B612 Drum Crusher.

I discussed another violation that I found related to the Training Plan records review. Although I have not completed the records review of the three employees I requested, I mentioned that Mr. Bowers and Mr. Graham's training record showed that they took a course, HS1670-W, which is 0.5 hour long, instead of HS1670-CBT, which is 1.0 hour long. I stated that in my previous discussion with Mr. Yimbo and Ms. Salvo during the records review; Mr. Yimbo and Ms. Salvo stated that the Training Department had previously estimated the HS1670-CBT, course to be 1.0 hour long which included the time to go to a training area to do a computer based training (CBT). Ms. Salvo said the actual training is only 0.5 hour. Currently, the employee could do it in their own computer, since it is web based, and would take less time. I stated that the violation is probably minor but, LLNL needs to submit a modification of their Training Plan indicating that the computer based training would be changed to a web-based and that the course length is reduced to 0.5 hour. LLNL said that a class 1 modification will be submitted to DTSC.

In response to LLNL's request to re-classify some of the violations found from the 2005 CEI, I informed LLNL that I will review their letter and will respond in writing. Pertaining to the question on web posting of SOV's and CEI reports, I informed LLNL that DTSC will continue posting the documents until December 2008.

I thanked LLNL for their extreme cooperation during the inspection. I specifically mentioned that Ms. Salvo, Mr. Michalik and Mr. Yimbo were so helpful in gathering the documents we needed and making sure our questions were answered during the inspection.

The SOV issued to LLNL was signed by Ms. Stephanie Goodwin, Department Head, Environmental Protection Department. See Attachment C.

II. ATTACHMENTS

Attachment A -	Site Maps/Photographs
Attachment B -	Hazardous Waste Facility Permit
Attachment C -	Summary of Observations/Certification of Compliance of SOV.
Attachment D -	Mixed Waste Shipments to Duratek and Envirocare
Attachment E -	RHWM Facilities Contingency Plan Emergency Call List, Rev. July 2004
Attachment F -	Training Summary, Records, Matrix, etc.
Attachment G -	Inventory of Wastes
Attachment H -	B612 Crushing Unit Operating Record/Container Contents Report
Attachment I -	Size Reduction Inspection Log, 9/26/06
Attachment J -	Debris Washer treatment Log/Daily When-In-Use Inspection Log
Attachment K -	Treatment Log for: Bulk/Rinsing; Dorr-Oliver, Evaporator, and Stabilization Units
Attachment L -	Daily Inspection Log for Container storage Units and DWTF Tank Farm
Attachment M -	Building 695 and 696 Weekly Inspection Log for September 2006
Attachment N -	Quarterly Inspections for Inactive Units in Building 213, 419 and 514.
Attachment O -	List of Attendees
Attachment P -	RCRA 6002 Questionnaire/Checklist

IX. REPORT WRITTEN BY:

Luz F. Castillo
Senior Hazardous Substances Scientist
Statewide Compliance Division

APRIL 13, 2007
Date

This September/October 2006 CEI Inspection Report posted on DTSC's website does not include all attachments from the original document. If you need copies of a specific attachment, please contact the DTSC project manager Luz Castillo at LCastill@dtsc.ca.gov.